

TABLE 2.—FLIGHT LENGTH DISTRIBUTION—Continued

Flight length (NM)		Airplane maximum range—nautical miles (NM)									
From	To	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
9200	9400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
9400	9600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
9600	9800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
9800	10000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

(c) Overnight Temperature Drop. For airplanes on which FRM is installed, the overnight temperature drop for this appendix is defined using:

(1) A temperature at the beginning of the overnight period that equals the landing temperature of the previous flight that is a random value based on a Gaussian distribution; and

(2) An overnight temperature drop that is a random value based on a Gaussian distribution.

(3) For any flight that will end with an overnight ground period (one flight per day out of an average number of flights per day, depending on utilization of the particular airplane model being evaluated), the landing outside air temperature (OAT) is to be chosen as a random value from the following Gaussian curve:

TABLE 3.—LANDING OUTSIDE AIR TEMPERATURE

Parameter	Landing outside air temperature °F
Mean Temperature	58.68
negative 1 std dev	20.55
positive 1 std dev	13.21

(4) The outside ambient air temperature (OAT) overnight temperature drop is to be chosen as a random value from the following Gaussian curve:

TABLE 4.—OUTSIDE AIR TEMPERATURE (OAT) DROP

Parameter	OAT drop temperature °F
Mean Temp	12.0
1 std dev	6.0

(d) Number of Simulated Flights Required in Analysis. In order for the Monte Carlo analysis to be valid for showing compliance with the fleet average and warm day flammability exposure requirements, the applicant must run the analysis for a minimum number of flights to ensure that the fleet average and warm day flammability exposure for the fuel tank under evaluation meets the applicable flammability limits defined in Table 5 of this appendix.

TABLE 5.—FLAMMABILITY EXPOSURE LIMIT

Minimum number of flights in Monte Carlo analysis	Maximum acceptable Monte Carlo average fuel tank flammability exposure (percent) to meet 3 percent requirements	Maximum acceptable Monte Carlo average fuel tank flammability exposure (percent) to meet 7 percent part 26 requirements
10,000	2.91	6.79
100,000	2.98	6.96
1,000,000	3.00	7.00

[Doc. No. FAA-2005-22997, 73 FR 42495, July 21, 2008]

PART 26—CONTINUED AIRWORTHINESS AND SAFETY IMPROVEMENTS FOR TRANSPORT CATEGORY AIRPLANES

Subpart A—General

Sec.

26.1 Purpose and scope.

26.3 Definitions.

26.5 Applicability table.

Subpart B—Enhanced Airworthiness Program for Airplane Systems

Sec.

26.11 Electrical wiring interconnection systems (EWIS) maintenance program.

Subpart C[Reserved]

Subpart D—Fuel Tank Flammability

26.31 Definitions.

26.33 Holders of type certificates: Fuel tank flammability.

26.35 Changes to type certificates affecting fuel tank flammability.

26.37 Pending type certification projects: Fuel tank flammability.

26.39 Newly produced airplanes: Fuel tank flammability.

Subpart E—Aging Airplane Safety—Damage Tolerance Data for Repairs and Alterations

26.41 Definitions.

§ 26.1

14 CFR Ch. I (1–1–10 Edition)

- 26.43 Holders of and applicants for type certificates—Repairs.
- 26.45 Holders of type certificates—Alterations and repairs to alterations.
- 26.47 Holders of and applicants for a supplemental type certificate—Alterations and repairs to alterations.
- 26.49 Compliance plan.

AUTHORITY: 49 U.S.C. 106(g), 40113, 44701, 44702 and 44704.

SOURCE: Docket No. FAA–2004–18379, 72 FR 63409, Nov. 8, 2007, unless otherwise noted.

Subpart A—General

§ 26.1 Purpose and scope.

(a) This part establishes requirements for support of the continued airworthiness of and safety improvements for transport category airplanes. These requirements may include performing assessments, developing design changes, developing revisions to Instructions for Continued Airworthiness (ICA), and making necessary documentation available to affected persons. Requirements of this part that establish standards for design changes and revisions to the ICA are considered airworthiness requirements.

(b) Except as provided in paragraph (c) of this section, this part applies to the following persons, as specified in each subpart of this part:

(1) Holders of type certificates and supplemental type certificates.

(2) Applicants for type certificates and supplemental type certificates and changes to those certificates (including

service bulletins describing design changes).

(3) Persons seeking design approval for airplane repairs, alterations, or modifications that may affect airworthiness.

(4) Holders of type certificates and their licensees producing new airplanes.

(c) An applicant for approval of a design change is not required to comply with any applicable airworthiness requirement of this part if the applicant elects or is required to comply with a corresponding amendment to part 25 of this chapter that is adopted concurrently or after that airworthiness requirement.

(d) For the purposes of this part, the word “type certificate” does not include supplemental type certificates.

§ 26.3 Definitions.

For the purposes of this part:

FAA Oversight Office is the aircraft certification office or office of the Transport Airplane Directorate with oversight responsibility for the relevant type certificate, supplemental type certificate, or manufacturer, as determined by the Administrator.

§ 26.5 Applicability table.

Table 1 of this section provides an overview of the applicability of this part. It provides guidance in identifying what sections apply to various types of entities. The specific applicability of each subpart and section is specified in the regulatory text.

TABLE 1—APPLICABILITY OF PART 26 RULES

	Applicable sections		
	Subpart B	Subpart D	Subpart E
	EAPAS/FTS	Fuel tank flammability	Damage tolerance data
Effective date of rule	December 10, 2007	December 26, 2008	January 11, 2008
Existing ¹ TC Holders	26.11	26.33	26.43, 26.45, 26.49
Pending ¹ TC Applicants	26.11	26.37	26.43, 26.45
Existing ¹ STC Holders	N/A	26.35	26.47, 26.49
Pending ¹ STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Future ² STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Manufacturers	N/A	26.39	N/A

¹ As of the effective date of the identified rule.

² Application made after the effective date of the identified rule.

[Doc. No. FAA-2005-22997, 74 FR 31618, July 2, 2009]

Subpart B—Enhanced Airworthiness Program for Airplane Systems

§ 26.11 Electrical wiring interconnection systems (EWIS) maintenance program.

(a) Except as provided in paragraph (g) of this section, this section applies to transport category, turbine-powered airplanes with a type certificate issued after January 1, 1958, that, as a result of the original certification, or later increase in capacity, have—

(1) A maximum type-certificated passenger capacity of 30 or more or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) Holders of, and applicants for, type certificates, as identified in paragraph (d) of this section must develop Instructions for Continued Airworthiness (ICA) for the representative airplane's EWIS in accordance with part 25, appendix H paragraphs H25.5(a)(1) and (b) of this subchapter in effect on December 10, 2007 for each affected type design, and submit those ICA for review and approval by the FAA Oversight Office. For purposes of this section, the "representative airplane" is the configuration of each model series airplane that incorporates all variations of EWIS used in production on that series airplane, and all TC-holder-designed modifications mandated by airworthiness directive as of the effective date of this rule. Each person specified in paragraph (d) of this section must also review any fuel tank system ICA developed by that person to comply with SFAR 88 to ensure compatibility with the EWIS ICA, including minimizing redundant requirements.

(c) Applicants for amendments to type certificates and supplemental type certificates, as identified in paragraph (d) of this section, must:

(1) Evaluate whether the design change for which approval is sought necessitates a revision to the ICA required by paragraph (b) of this section to comply with the requirements of Appendix H, paragraphs H25.5(a)(1) and (b). If so, the applicant must develop and submit the necessary revisions for

review and approval by the FAA Oversight Office.

(2) Ensure that any revised EWIS ICA remain compatible with any fuel tank system ICA previously developed to comply with SFAR 88 and any redundant requirements between them are minimized.

(d) The following persons must comply with the requirements of paragraph (b) or (c) of this section, as applicable, before the dates specified.

(1) Holders of type certificates (TC): December 10, 2009.

(2) Applicants for TCs, and amendments to TCs (including service bulletins describing design changes), if the date of application was before December 10, 2007 and the certificate was issued on or after December 10, 2007: December 10, 2009 or the date the certificate is issued, whichever occurs later.

(3) Unless compliance with § 25.1729 of this subchapter is required or elected, applicants for amendments to TCs, if the application was filed on or after December 10, 2007: December 10, 2009, or the date of approval of the certificate, whichever occurs later.

(4) Applicants for supplemental type certificates (STC), including changes to existing STCs, if the date of application was before December 10, 2007 and the certificate was issued on or after December 10, 2007: June 7, 2010, or the date of approval of the certificate, whichever occurs later.

(5) Unless compliance with § 25.1729 of this subchapter is required or elected, applicants for STCs, including changes to existing STCs, if the application was filed on or after December 10, 2007, June 7, 2010, or the date of approval of the certificate, whichever occurs later.

(e) Each person identified in paragraphs (d)(1), (d)(2), and (d)(4) of this section must submit to the FAA Oversight Office for approval a compliance plan by March 10, 2008. The compliance plan must include the following information:

(1) A proposed project schedule, identifying all major milestones, for meeting the compliance dates specified in paragraph (d) of this section.

§ 26.31

(2) A proposed means of compliance with this section, identifying all required submissions, including all compliance items as mandated in part 25, Appendix H paragraphs H25.5(a)(1) and (b) of this subchapter in effect on December 10, 2007, and all data to be developed to substantiate compliance.

(3) A proposal for submitting a draft of all compliance items required by paragraph (e)(2) of this section for review by the FAA Oversight Office not less than 60 days before the compliance time specified in paragraph (d) of this section.

(4) A proposal for how the approved ICA will be made available to affected persons.

(f) Each person specified in paragraph (e) must implement the compliance plan, or later approved revisions, as approved in compliance with paragraph (e) of this section.

(g) This section does not apply to the following airplane models:

- (1) Lockheed L-188
- (2) Bombardier CL-44
- (3) Mitsubishi YS-11
- (4) British Aerospace BAC 1-11
- (5) Concorde
- (6) deHavilland D.H. 106 Comet 4C
- (7) VFW—Vereinigte Flugtechnische Werk VFW-614
- (8) Ilyushin Aviation IL 96T
- (9) Bristol Aircraft Britannia 305
- (10) Handley Page Herald Type 300
- (11) Avions Marcel Dassault—Breguet Aviation Mercure 100C
- (12) Airbus Caravelle
- (13) Lockheed L-300

[Amdt. 26-0, 72 FR 63409, Nov. 8, 2007; 72 FR 68618, Dec. 5, 2007]

Subpart C [Reserved]

Subpart D—Fuel Tank Flammability

SOURCE: Docket No. FAA-2005-22997, 73 FR 42499, July 21, 2008, unless otherwise noted.

§ 26.31 Definitions.

For purposes of this subpart—

(a) *Fleet Average Flammability Exposure* has the meaning defined in appendix N of part 25 of this chapter.

(b) *Normally Emptied* means a fuel tank other than a Main Fuel Tank.

14 CFR Ch. I (1–1–10 Edition)

Main Fuel Tank is defined in 14 CFR 25.981(b).

§ 26.33 Holders of type certificates: Fuel tank flammability.

(a) *Applicability.* This section applies to U.S. type certificated transport category, turbine-powered airplanes, other than those designed solely for all-cargo operations, for which the State of Manufacture issued the original certificate of airworthiness or export airworthiness approval on or after January 1, 1992, that, as a result of original type certification or later increase in capacity have:

(1) A maximum type-certificated passenger capacity of 30 or more, or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) *Flammability Exposure Analysis.* (1) *General.* Within 150 days after December 26, 2008, holders of type certificates must submit for approval to the FAA Oversight Office a flammability exposure analysis of all fuel tanks defined in the type design, as well as all design variations approved under the type certificate that affect flammability exposure. This analysis must be conducted in accordance with appendix N of part 25 of this chapter.

(2) *Exception.* This paragraph (b) does not apply to—

(i) Fuel tanks for which the type certificate holder has notified the FAA under paragraph (g) of this section that it will provide design changes and service instructions for Flammability Reduction Means or an Ignition Mitigation Means (IMM) meeting the requirements of paragraph (c) of this section.

(ii) Fuel tanks substantiated to be conventional unheated aluminum wing tanks.

(c) *Design Changes.* For fuel tanks with a Fleet Average Flammability Exposure exceeding 7 percent, one of the following design changes must be made.

(1) *Flammability Reduction Means (FRM).* A means must be provided to reduce the fuel tank flammability.

(i) Fuel tanks that are designed to be Normally Emptied must meet the flammability exposure criteria of appendix M of part 25 of this chapter if any portion of the tank is located within the fuselage contour.

(ii) For all other fuel tanks, the FRM must meet all of the requirements of appendix M of part 25 of this chapter, except, instead of complying with paragraph M25.1 of this appendix, the Fleet Average Flammability Exposure may not exceed 7 percent.

(2) *Ignition Mitigation Means (IMM)*. A means must be provided to mitigate the effects of an ignition of fuel vapors within the fuel tank such that no damage caused by an ignition will prevent continued safe flight and landing.

(d) *Service Instructions*. No later than December 27, 2010, holders of type certificates required by paragraph (c) of this section to make design changes must meet the requirements specified in either paragraph (d)(1) or (d)(2) of this section. The required service instructions must identify each airplane subject to the applicability provisions of paragraph (a) of this section.

(1) *FRM*. The type certificate holder must submit for approval by the FAA Oversight Office design changes and service instructions for installation of fuel tank flammability reduction means (FRM) meeting the criteria of paragraph (c) of this section.

(2) *IMM*. The type certificate holder must submit for approval by the FAA Oversight Office design changes and service instructions for installation of fuel tank IMM that comply with 14 CFR 25.981(c) in effect on December 26, 2008.

(e) *Instructions for Continued Airworthiness (ICA)*. No later than December 27, 2010, holders of type certificates required by paragraph (c) of this section to make design changes must submit for approval by the FAA Oversight Office, critical design configuration control limitations (CDCCL), inspections, or other procedures to prevent increasing the flammability exposure of any tanks equipped with FRM above that permitted under paragraph (c)(1) of this section and to prevent degradation of the performance of any IMM provided under paragraph (c)(2) of this section. These CDCCL, inspections, and procedures must be included in the Airworthiness Limitations Section (ALS) of the ICA required by 14 CFR 25.1529 or paragraph (f) of this section. Unless shown to be impracticable, visible means to identify critical features of

the design must be placed in areas of the airplane where foreseeable maintenance actions, repairs, or alterations may compromise the critical design configuration limitations. These visible means must also be identified as a CDCCL.

(f) *Airworthiness Limitations*. Unless previously accomplished, no later than December 27, 2010, holders of type certificates affected by this section must establish an ALS of the maintenance manual or ICA for each airplane configuration evaluated under paragraph (b)(1) of this section and submit it to the FAA Oversight Office for approval. The ALS must include a section that contains the CDCCL, inspections, or other procedures developed under paragraph (e) of this section.

(g) *Compliance Plan for Flammability Exposure Analysis*. Within 90 days after December 26, 2008, each holder of a type certificate required to comply with paragraph (b) of this section must submit to the FAA Oversight Office a compliance plan consisting of the following:

(1) A proposed project schedule for submitting the required analysis, or a determination that compliance with paragraph (b) of this section is not required because design changes and service instructions for FRM or IMM will be developed and made available as required by this section.

(2) A proposed means of compliance with paragraph (b) of this section, if applicable.

(h) *Compliance Plan for Design Changes and Service Instructions*. Within 210 days after December 26, 2008, each holder of a type certificate required to comply with paragraph (d) of this section must submit to the FAA Oversight Office a compliance plan consisting of the following:

(1) A proposed project schedule, identifying all major milestones, for meeting the compliance dates specified in paragraphs (d), (e) and (f) of this section.

(2) A proposed means of compliance with paragraphs (d), (e) and (f) of this section.

(3) A proposal for submitting a draft of all compliance items required by paragraphs (d), (e) and (f) of this section for review by the FAA Oversight

§ 26.35

14 CFR Ch. I (1–1–10 Edition)

Office not less than 60 days before the compliance times specified in those paragraphs.

(4) A proposal for how the approved service information and any necessary modification parts will be made available to affected persons.

(i) Each affected type certificate holder must implement the compliance plans, or later revisions, as approved under paragraph (g) and (h) of this section.

[Doc. No. FAA-2005-22997, 73 FR 42499, July 21, 2008, as amended by Amdt. 26-3, 74 FR 31619, July 2, 2009]

§ 26.35 Changes to type certificates affecting fuel tank flammability.

(a) *Applicability.* This section applies to holders and applicants for approvals of the following design changes to any airplane subject to 14 CFR 26.33(a):

(1) Any fuel tank designed to be Normally Emptied if the fuel tank installation was approved pursuant to a supplemental type certificate or a field approval before December 26, 2008;

(2) Any fuel tank designed to be Normally Emptied if an application for a supplemental type certificate or an amendment to a type certificate was made before December 26, 2008 and if the approval was not issued before December 26, 2008; and

(3) If an application for a supplemental type certificate or an amendment to a type certificate is made on or after December 26, 2008, any of the following design changes:

(i) Installation of a fuel tank designed to be Normally Emptied,

(ii) Changes to existing fuel tank capacity, or

(iii) Changes that may increase the flammability exposure of an existing fuel tank for which FRM or IMM is required by § 26.33(c).

(b) *Flammability Exposure Analysis*—(1) *General.* By the times specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section, each person subject to this section must submit for approval a flammability exposure analysis of the auxiliary fuel tanks or other affected fuel tanks, as defined in the type design, to the FAA Oversight Office. This analysis must be conducted in accordance with appendix N of part 25 of this chapter.

(i) Holders of supplemental type certificates and field approvals: Within 12 months of December 26, 2008,

(ii) Applicants for supplemental type certificates and for amendments to type certificates: Within 12 months after December 26, 2008, or before the certificate is issued, whichever occurs later.

(2) *Exception.* This paragraph does not apply to—

(i) Fuel tanks for which the type certificate holder, supplemental type certificate holder, or field approval holder has notified the FAA under paragraph (f) of this section that it will provide design changes and service instructions for an IMM meeting the requirements of § 25.981(c) in effect December 26, 2008; and

(ii) Fuel tanks substantiated to be conventional unheated aluminum wing tanks.

(c) *Impact Assessment.* By the times specified in paragraphs (c)(1) and (c)(2) of this section, each person subject to paragraph (a)(1) of this section holding an approval for installation of a Normally Emptied fuel tank on an airplane model listed in Table 1 of this section, and each person subject to paragraph (a)(3)(iii) of this section, must submit for approval to the FAA Oversight Office an assessment of the fuel tank system, as modified by their design change. The assessment must identify any features of the design change that compromise any critical design configuration control limitation (CDCCL) applicable to any airplane on which the design change is eligible for installation.

(1) Holders of supplemental type certificates and field approvals: Before June 26, 2011.

(2) Applicants for supplemental type certificates and for amendments to type certificates: Before June 26, 2011 or before the certificate is issued, whichever occurs later.

TABLE 1

Model—Boeing

747 Series
737 Series
777 Series
767 Series

TABLE 1—Continued

757 Series
Model—Airbus
A318, A319, A320, A321 Series
A300, A310 Series
A330, A340 Series

(d) *Design Changes and Service Instructions.* By the times specified in paragraph (e) of this section, each person subject to this section must meet the requirements of paragraphs (d)(1) or (d)(2) of this section, as applicable.

(1) For holders and applicants subject to paragraph (a)(1) or (a)(3)(iii) of this section, if the assessment required by paragraph (c) of this section identifies any features of the design change that compromise any CDCCL applicable to any airplane on which the design change is eligible for installation, the holder or applicant must submit for approval by the FAA Oversight Office design changes and service instructions for Flammability Impact Mitigation Means (FIMM) that would bring the design change into compliance with the CDCCL. Any fuel tank modified as required by this paragraph must also be evaluated as required by paragraph (b) of this section.

(2) Applicants subject to paragraph (a)(2), or (a)(3)(i) of this section must comply with the requirements of 14 CFR 25.981, in effect on December 26, 2008.

(3) Applicants subject to paragraph (a)(3)(ii) of this section must comply with the requirements of 14 CFR 26.33.

(e) *Compliance Times for Design Changes and Service Instructions.* The following persons subject to this sec-

tion must comply with the requirements of paragraph (d) of this section at the specified times.

(1) Holders of supplemental type certificates and field approvals: Before December 26, 2012.

(2) Applicants for supplemental type certificates and for amendments to type certificates: Before December 26, 2012, or before the certificate is issued, whichever occurs later.

(f) *Compliance Planning.* By the applicable date specified in Table 2 of this section, each person subject to paragraph (a)(1) of this section must submit for approval by the FAA Oversight Office compliance plans for the flammability exposure analysis required by paragraph (b) of this section, the impact assessment required by paragraph (c) of this section, and the design changes and service instructions required by paragraph (d) of this section. Each person's compliance plans must include the following:

(1) A proposed project schedule for submitting the required analysis or impact assessment.

(2) A proposed means of compliance with paragraph (d) of this section.

(3) For the requirements of paragraph (d) of this section, a proposal for submitting a draft of all design changes, if any are required, and Airworthiness Limitations (including CDCCLs) for review by the FAA Oversight Office not less than 60 days before the compliance time specified in paragraph (e) of this section.

(4) For the requirements of paragraph (d) of this section, a proposal for how the approved service information and any necessary modification parts will be made available to affected persons.

TABLE 2—COMPLIANCE PLANNING DATES

	Flammability exposure analysis plan	Impact assessment plan	Design changes and service instructions plan
STC and Field Approval Holders.	March 26, 2009	February 26, 2011	August 26, 2011.

(g) Each person subject to this section must implement the compliance

plans, or later revisions, as approved under paragraph (f) of this section.

[Doc. No. FAA-2005-22997, 73 FR 42499, July 21, 2008, as amended by Amdt. 26-3, 74 FR 31619, July 2, 2009]

§ 26.37

§ 26.37 Pending type certification projects: Fuel tank flammability.

(a) *Applicability.* This section applies to any new type certificate for a transport category airplane, if the application was made before December 26, 2008, and if the certificate was not issued before December 26, 2008. This section applies only if the airplane would have—

(1) A maximum type-certificated passenger capacity of 30 or more, or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) If the application was made on or after June 6, 2001, the requirements of 14 CFR 25.981 in effect on December 26, 2008, apply.

[Doc. No. FAA-2005-22997, 73 FR 42499, July 21, 2008, as amended by Amdt. 26-3, 74 FR 31619, July 2, 2009]

§ 26.39 Newly produced airplanes: Fuel tank flammability.

(a) *Applicability.* This section applies to Boeing model airplanes specified in Table 1 of this section, including passenger and cargo versions of each model, when application is made for original certificates of airworthiness or export airworthiness approvals after December 27, 2010.

TABLE 1

Model—Boeing

747 Series
737 Series
777 Series
767 Series

(b) Any fuel tank meeting all of the criteria stated in paragraphs (b)(1), (b)(2) and (b)(3) of this section must have flammability reduction means (FRM) or ignition mitigation means (IMM) that meet the requirements of 14 CFR 25.981 in effect on December 26, 2008.

(1) The fuel tank is Normally Emptied.

(2) Any portion of the fuel tank is located within the fuselage contour.

(3) The fuel tank exceeds a Fleet Average Flammability Exposure of 7 percent.

(c) All other fuel tanks that exceed an Fleet Average Flammability Exposure of 7 percent must have an IMM that meets 14 CFR 25.981(d) in effect on

14 CFR Ch. I (1–1–10 Edition)

December 26, 2008, or an FRM that meets all of the requirements of Appendix M to this part, except instead of complying with paragraph M25.1 of that appendix, the Fleet Average Flammability Exposure may not exceed 7 percent.

[Doc. No. FAA-2005-22997, 73 FR 42499, July 21, 2008, as amended by Amdt. 26-3, 74 FR 31619, July 2, 2009]

Subpart E—Aging Airplane Safety—Damage Tolerance Data for Repairs and Alterations

SOURCE: Docket No. FAA-2005-21693, 72 FR 70505, Dec. 12, 2007, unless otherwise noted.

§ 26.41 Definitions.

Affects (or Affected) means structure has been physically repaired, altered, or modified, or the structural loads acting on the structure have been increased or redistributed.

Baseline structure means structure that is designed under the original type certificate or amended type certificate for that airplane model.

Damage Tolerance Evaluation (DTE) means a process that leads to a determination of maintenance actions necessary to detect or preclude fatigue cracking that could contribute to a catastrophic failure. As applied to repairs and alterations, a DTE includes the evaluation both of the repair or alteration and of the fatigue critical structure affected by the repair or alteration.

Damage Tolerance Inspection (DTI) means the inspection developed as a result of a DTE. A DTI includes the areas to be inspected, the inspection method, the inspection procedures, including acceptance and rejection criteria, the threshold, and any repeat intervals associated with those inspections. The DTI may specify a time limit when a repair or alteration needs to be replaced or modified. If the DTE concludes that DT-based supplemental structural inspections are not necessary, the DTI contains a statement to that effect.

DT data mean DTE documentation and the DTI.

DTE documentation means data that identify the evaluated fatigue critical

structure, the basic assumptions applied in a DTE, and the results of a DTE.

Fatigue critical structure means airplane structure that is susceptible to fatigue cracking that could contribute to a catastrophic failure, as determined in accordance with § 25.571 of this chapter. Fatigue critical structure includes structure, which, if repaired or altered, could be susceptible to fatigue cracking and contribute to a catastrophic failure. Such structure may be part of the baseline structure or part of an alteration.

Implementation schedule consists of documentation that establishes the timing for accomplishing the necessary actions for developing DT data for repairs and alterations, and for incorporating those data into an operator's continuing airworthiness maintenance program. The documentation must identify times when actions must be taken as specific numbers of airplane flight hours, flight cycles, or both.

Published repair data mean instructions for accomplishing repairs, which are published for general use in structural repair manuals and service bulletins (or equivalent types of documents).

§ 26.43 Holders of and applicants for type certificates—Repairs.

(a) *Applicability.* Except as specified in paragraph (g) of this section, this section applies to transport category, turbine powered airplane models with a type certificate issued after January 1, 1958, that as a result of original type certification or later increase in capacity have—

(1) A maximum type certificated passenger seating capacity of 30 or more; or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) *List of fatigue critical baseline structure.* For airplanes specified in paragraph (a) of this section, the holder of or applicant for a type certificate must—

(1) Identify fatigue critical baseline structure for all airplane model variations and derivatives approved under the type certificate; and

(2) Develop and submit to the FAA Oversight Office for review and ap-

proval, a list of the structure identified under paragraph (b)(1) of this section and, upon approval, make the list available to persons required to comply with § 26.47 and §§ 121.1109 and 129.109 of this chapter.

(c) *Existing and future published repair data.* For repair data published by a holder of a type certificate that is current as of January 11, 2008 and for all later published repair data, the holder of a type certificate must—

(1) Review the repair data and identify each repair specified in the data that affects fatigue critical baseline structure identified under paragraph (b)(1) of this section;

(2) Perform a DTE and develop the DTI for each repair identified under paragraph (c)(1) of this section, unless previously accomplished;

(3) Submit the DT data to the FAA Oversight Office or its properly authorized designees for review and approval; and

(4) Upon approval, make the DTI available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(d) *Future repair data not published.* For repair data developed by a holder of a type certificate that are approved after January 11, 2008 and are not published, the type certificate holder must accomplish the following for repairs specified in the repair data that affect fatigue critical baseline structure:

(1) Perform a DTE and develop the DTI.

(2) Submit the DT data required in paragraph (d)(1) of this section for review and approval by the FAA Oversight Office or its properly authorized designees.

(3) Upon approval, make the approved DTI available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(e) *Repair Evaluation Guidelines.* The holder of a type certificate for each airplane model subject to this section must—

(1) Develop repair evaluation guidelines for operators' use that include—

(i) A process for conducting surveys of affected airplanes that will enable identification and documentation of all existing repairs that affect fatigue critical baseline structure identified

§ 26.45

under paragraph (b)(1) of this section and § 26.45(b)(2);

(ii) A process that will enable operators to obtain the DTI for repairs identified under paragraph (e)(1)(i) of this section; and

(iii) An implementation schedule for repairs covered by the repair evaluation guidelines. The implementation schedule must identify times when actions must be taken as specific numbers of airplane flight hours, flight cycles, or both.

(2) Submit the repair evaluation guidelines to the FAA Oversight Office for review and approval.

(3) Upon approval, make the guidelines available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(4) If the guidelines direct the operator to obtain assistance from the holder of a type certificate, make such assistance available in accordance with the implementation schedule.

(f) *Compliance times.* Holders of type certificates must submit the following to the FAA Oversight Office or its properly authorized designees for review and approval by the specified compliance time:

(1) The identified list of fatigue critical baseline structure required by paragraph (b)(2) of this section must be submitted no later than 180 days after January 11, 2008 or before issuance of the type certificate, whichever occurs later.

(2) For published repair data that are current as of January 11, 2008, the DT data required by paragraph (c)(3) of this section must be submitted by June 30, 2009.

(3) For repair data published after January 11, 2008, the DT data required by paragraph (c)(3) of this section must be submitted before FAA approval of the repair data.

(4) For unpublished repair data developed after January 11, 2008, the DT data required by paragraph (d)(1) of this section must be submitted within 12 months of the airplane's return to service or in accordance with a schedule approved by the FAA Oversight Office.

(5) The repair evaluation guidelines required by paragraph (e)(1) of this sec-

14 CFR Ch. I (1–1–10 Edition)

tion must be submitted by December 30, 2009.

(g) *Exceptions.* The requirements of this section do not apply to the following transport category airplane models:

(1) Convair CV-240, 340, 440, if modified to include turbine engines.

(2) Vickers Armstrong Viscount, TCDS No. A-814.

(3) Douglas DC-3, if modified to include turbine engines, TCDS No. A-618.

(4) Bombardier CL-44, TCDS No. 1A20.

(5) Mitsubishi YS-11, TCDS No. A1PC.

(6) British Aerospace BAC 1-11, TCDS No. A5EU.

(7) Concorde, TCDS No. A45EU.

(8) deHavilland D.H. 106 Comet 4C, TCDS No. 7A10.

(9) deHavilland DHC-7, TCDS No. A20EA.

(10) VFW-Vereinigte Flugtechnische Werk VFW-614, TCDS No. A39EU.

(11) Ilyushin Aviation IL 96T, TCDS No. A54NM.

(12) Bristol Aircraft Britannia 305, TCDS No. 7A2.

(13) Handley Page Herald Type 300, TCDS No. A21N.

(14) Avions Marcel Dassault—Breguet Aviation Mercure 100C, TCDS No. A40EU.

(15) Airbus Caravelle, TCDS No. 7A6.

(16) Lockheed L-300, TCDS No. A2S0.

(17) Boeing 707-100/-200, TCDS No. 4A21.

(18) Boeing 707-300/-400, TCDS No. 4A26.

(19) Boeing 720, TCDS No. 4A28.

§ 26.45 Holders of type certificates—Alterations and repairs to alterations.

(a) *Applicability.* This section applies to transport category airplanes subject to § 26.43.

(b) *Fatigue critical alteration structure.* For existing and future alteration data developed by the holder of a type certificate, the holder must—

(1) Review existing alteration data and identify all alterations that affect fatigue critical baseline structure identified under § 26.43(b)(1);

(2) For each alteration identified under paragraph (b)(1) of this section, identify any fatigue critical alteration structure;

(3) Develop and submit to the FAA Oversight Office for review and approval a list of the structure identified under paragraph (b)(2) of this section; and

(4) Upon approval, make the list required in paragraph (b)(3) of this section available to persons required to comply with §§121.1109 and 129.109 of this chapter.

(c) *DT Data.* For existing and future alteration data developed by the holder of a type certificate that affect fatigue critical baseline structure identified under §26.43(b)(1), unless previously accomplished, the holder must—

(1) Perform a DTE and develop the DTI for the alteration and fatigue critical baseline structure that is affected by the alteration;

(2) Submit the DT data developed in accordance with paragraphs (c)(1) of this section to the FAA Oversight Office or its properly authorized designees for review and approval; and

(3) Upon approval, make the DTI available to persons required to comply with §§121.1109 and 129.109 of this chapter.

(d) *DT Data for Repairs Made to Alterations.* For existing and future repair data developed by a holder of a type certificate, the type certificate holder must—

(1) Review the repair data, and identify each repair that affects any fatigue critical alteration structure identified under paragraph (b)(2) of this section;

(2) For each repair identified under paragraph (d)(1) of this section, unless previously accomplished, perform a DTE and develop DTI;

(3) Submit the DT data developed in accordance with paragraph (d)(2) of this section to the FAA Oversight Office or its properly authorized designees for review and approval; and

(4) Upon approval, make the DTI available to persons required to comply with §§121.1109 and 129.109 of this chapter.

(e) *Compliance times.* Holders of type certificates must submit the following to the FAA Oversight Office or its properly authorized designees for review and approval by the specified compliance time:

(1) The list of fatigue critical alteration structure identified under paragraph (b)(3) of this section must be submitted no later than 360 days after January 11, 2008.

(2) For alteration data developed and approved before January 11, 2008, the DT data required by paragraph (c)(2) of this section must be submitted by June 30, 2009.

(3) For alteration data approved on or after January 11, 2008, DT data required by paragraph (c)(2) of this section must be submitted before initial approval of the alteration data.

(4) For repair data developed and approved before January 11, 2008, the DT data required by paragraph (d)(2) of this section must be submitted by June 30, 2009.

(5) For repair data developed and approved after January 11, 2008, the DT data required by paragraph (d)(2) of this section must be submitted within 12 months after initial approval of the repair data and before making the DT data available to persons required to comply with §§121.1109 and 129.109 of this chapter.

§ 26.47 Holders of and applicants for a supplemental type certificate—Alterations and repairs to alterations.

(a) *Applicability.* This section applies to transport category airplanes subject to §26.43.

(b) *Fatigue critical alteration structure.* For existing structural alteration data approved under a supplemental certificate, the holder of the supplemental certificate must—

(1) Review the alteration data and identify all alterations that affect fatigue critical baseline structure identified under §26.43(b)(1);

(2) For each alteration identified under paragraph (b)(1) of this section, identify any fatigue critical alteration structure;

(3) Develop and submit to the FAA Oversight Office for review and approval a list of the structure identified under paragraph (b)(2) of this section; and

(4) Upon approval, make the list required in paragraph (b)(3) of this section available to persons required to comply with §§121.1109 and 129.109 of this chapter.

(c) *DT Data.* For existing and future alteration data developed by the holder of a supplemental type certificate that affect fatigue critical baseline structure identified under § 26.43(b)(1), unless previously accomplished, the holder of a supplemental type certificate must—

(1) Perform a DTE and develop the DTI for the alteration and fatigue critical baseline structure that is affected by the alteration;

(2) Submit the DT data developed in accordance with paragraphs (c)(1) of this section to the FAA Oversight Office or its properly authorized designees for review and approval; and

(3) Upon approval, make the DTI available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(d) *DT Data for Repairs Made to Alterations.* For existing and future repair data developed by the holder of a supplemental holder of a supplemental type certificate, the holder of a supplemental type certificate must—

(1) Review the repair data, and identify each repair that affects any fatigue critical alteration structure identified under paragraph (b)(2) of this section;

(2) For each repair identified under paragraph (d)(1) of this section, unless previously accomplished, perform a DTE and develop DTI;

(3) Submit the DT data developed in accordance with paragraph (d)(2) of this section to the FAA Oversight Office or its properly authorized designees for review and approval; and

(4) Upon approval, make the DTI available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(e) *Compliance times.* Holders of supplemental type certificates must submit the following to the FAA Oversight Office or its properly authorized designees for review and approval by the specified compliance time:

(1) The list of fatigue critical alteration structure required by paragraph (b)(3) of this section must be submitted no later than 360 days after January 11, 2008.

(2) For alteration data developed and approved before January 11, 2008, the DT data required by paragraph (c)(2) of

this section must be submitted by June 30, 2009.

(3) For alteration data developed after January 11, 2008, the DT data required by paragraph (c)(2) of this section must be submitted before approval of the alteration data and making it available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

(4) For repair data developed and approved before January 11, 2008, the DT data required by paragraph (d)(2) of this section must be submitted by June 30, 2009.

(5) For repair data developed and approved after January 11, 2008, the DT data required by paragraph (d)(2) of this section, must be submitted within 12 months after initial approval of the repair data and before making the DT data available to persons required to comply with §§ 121.1109 and 129.109 of this chapter.

§ 26.49 Compliance plan.

(a) *Compliance plan.* Except for applicants for type certificates and supplemental type certificates whose applications are submitted after January 11, 2008, each person identified in §§ 26.43, 26.45, and 26.47, must submit a compliance plan consisting of the following:

(1) A project schedule identifying all major milestones for meeting the compliance times specified in §§ 26.43(f), 26.45(e), and 26.47(e), as applicable.

(2) A proposed means of compliance with §§ 26.43, 26.45, and 26.47, as applicable.

(3) A plan for submitting a draft of all compliance items required by this subpart for review by the FAA Oversight Office not less than 60 days before the applicable compliance date.

(b) *Compliance dates for compliance plans.* The following persons must submit the compliance plan described in paragraph (a) of this section to the FAA Oversight Office for approval on the following schedule:

(1) For holders of type certificates, no later than 90 days after January 11, 2008.

(2) For holders of supplemental type certificates no later than 180 days after January 11, 2008.

(3) For applicants for changes to type certificates whose application are submitted before January 11, 2008, no later than 180 days after January 11, 2008.

(c) *Compliance Plan Implementation.* Each affected person must implement the compliance plan as approved in compliance with paragraph (a) of this section.

PART 27—AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT

Subpart A—General

Sec.

- 27.1 Applicability.
- 27.2 Special retroactive requirements.

Subpart B—Flight

GENERAL

- 27.21 Proof of compliance.
- 27.25 Weight limits.
- 27.27 Center of gravity limits.
- 27.29 Empty weight and corresponding center of gravity.
- 27.31 Removable ballast.
- 27.33 Main rotor speed and pitch limits.

PERFORMANCE

- 27.45 General.
- 27.49 Performance at minimum operating speed.
- 27.51 Takeoff.
- 27.65 Climb: all engines operating.
- 27.67 Climb: one engine inoperative.
- 27.71 Autorotation performance.
- 27.75 Landing.
- 27.87 Height-speed envelope.

FLIGHT CHARACTERISTICS

- 27.141 General.
- 27.143 Controllability and maneuverability.
- 27.151 Flight controls.
- 27.161 Trim control.
- 27.171 Stability: general.
- 27.173 Static longitudinal stability.
- 27.175 Demonstration of static longitudinal stability.
- 27.177 Static directional stability.

GROUND AND WATER HANDLING CHARACTERISTICS

- 27.231 General.
- 27.235 Taxiing condition.
- 27.239 Spray characteristics.
- 27.241 Ground resonance.

MISCELLANEOUS FLIGHT REQUIREMENTS

- 27.251 Vibration.

Subpart C—Strength Requirements

GENERAL

- 27.301 Loads.
- 27.303 Factor of safety.
- 27.305 Strength and deformation.
- 27.307 Proof of structure.
- 27.309 Design limitations.

FLIGHT LOADS

- 27.321 General.
- 27.337 Limit maneuvering load factor.
- 27.339 Resultant limit maneuvering loads.
- 27.341 Gust loads.
- 27.351 Yawing conditions.
- 27.361 Engine torque.

CONTROL SURFACE AND SYSTEM LOADS

- 27.391 General.
- 27.395 Control system.
- 27.397 Limit pilot forces and torques.
- 27.399 Dual control system.
- 27.411 Ground clearance: tail rotor guard.
- 27.427 Unsymmetrical loads.

GROUND LOADS

- 27.471 General.
- 27.473 Ground loading conditions and assumptions.
- 27.475 Tires and shock absorbers.
- 27.477 Landing gear arrangement.
- 27.479 Level landing conditions.
- 27.481 Tail-down landing conditions.
- 27.483 One-wheel landing conditions.
- 27.485 Lateral drift landing conditions.
- 27.493 Braked roll conditions.
- 27.497 Ground loading conditions: landing gear with tail wheels.
- 27.501 Ground loading conditions: landing gear with skids.
- 27.505 Ski landing conditions.

WATER LOADS

- 27.521 Float landing conditions.

MAIN COMPONENT REQUIREMENTS

- 27.547 Main rotor structure.
- 27.549 Fuselage, landing gear, and rotor pylon structures.

EMERGENCY LANDING CONDITIONS

- 27.561 General.
- 27.562 Emergency landing dynamic conditions.
- 27.563 Structural ditching provisions.

FATIGUE EVALUATION

- 27.571 Fatigue evaluation of flight structure.

Subpart D—Design and Construction

GENERAL

- 27.601 Design.